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Process Specification for the ESD Handling of CDE Parts and the Assembly

SAI-PROC-1233

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Revision -

Prepared by:

SWALES AEROSPACE

5050 Powder Mill Md.

Beltsville, MD

SIGNATURE PAGE

This is a controlled document. Any changes require the approval of the Configuration Control Board.

Prepared by: John I. Haggerty _____ 9/4/03

John I. Haggerty

Date

Reviewed by: Dr. J. Eric Grove _____ 9/8/03

Dr. J. Eric Grove, NRL

Date

Quality Assurance: Brian Martini _____ 9/5/03

Brian Martini, SAI

Date

Project Manager: Michael J. Kennedy _____ 9/4/03

Michael Kennedy, SAI

Date

DOCUMENT CHANGE RECORD

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–	Initial Release	9/5/03	B. MARTINI

1 Scope

This specification establishes the process and requirements for the ESD Handling of CDE Parts and the Assembly.

2 Applicable Documents

The following documents form a part of this specification to the extent specified herein. If no revision is indicated, the latest issue in effect is applicable.

2.1 Government Documents

DOCUMENTS

NASA-STD-8739.7 Electrostatic Discharge Control

2.2 Non-Government Documents

SWALES AEROSPACE DRAWINGS OR DOCUMENTS

SAI-PROC-1231 Process Specification for the Handling of CsI Crystals

SAI-PROC-1232 Process Specification for the Handling of Photodiode Assemblies

3 Requirements

3.1 General

3.1.1 The PDAs are ESD sensitive. They require special handling from the time of receipt, thru bonding, inspection after bonding and shipment.

3.2 Facilities

3.2.1 Operations herein shall be performed in a class 100,000 or better clean room with temperature control between 68°F to 86°F (20°C to 30°C) and humidity control between 30% RH and 50% RH. Continuous temperature and humidity monitoring records shall be maintained and shall be made available for review.

3.2.2 The work surfaces used to handle the PDAs and CDE assembly shall be ESD certified. The typical grounding method shall be; workbench grounded to table mat, table mat grounded to floor mat and floor mat grounded to earth ground.

3.2.3 The oven to bake-out the PDAs shall be clean, air re-circulating and ESD grounded.

3.2.4 Use of wrist straps and shoe straps is not required.

3.3 Materials

3.3.1 Clothing requirements for the clean room shall be hairnet, ESD smock and shoe covers. Personnel handling hardware, and/or involved in the bonding operation must wear powder-free nitrile gloves and a beard mask.

3.3.2 Powder-free nitrile gloves shall be static dissipative. They shall be “Ansell Brand TNT® Blue”.

3.4 Personnel

3.4.1 All personnel working to this document shall be trained and certified to NASA-STD-8739.7.

3.5 Handling

3.5.1 PDA handling

- a) The PDA is ESD sensitive. The ESD bag containing the PDA shall only be opened on an ESD grounded surface. Assembly of the PDA shall be confined to an ESD grounded surface.
- b) Operators shall periodically touch the table-mats to reduce charge build-up.
- c) The PDA is to be handled by the ceramic carrier only. Do not touch the clear optical window, even with gloves.
- d) Only powder-free nitrile gloves shall be used while contacting or PDAs. PDAs shall

never be handled using bare hands.

3.5.2 CDE Assembly Handling

- a) Once the PDA is bonded to the crystal the assembly becomes ESD sensitive.
- b) Operators shall periodically touch the table-mats to reduce charge build-up.
- c) The assembly shall be either on a grounded tablemat or in an ESD storage bag.

4 Quality Assurance Provisions

4.1 Personnel Certification

4.1.1 All operators shall be certified to NASA-STD-8739.7, Electrostatic Discharge Control.

4.1.2 Trained and competent technicians as determined shall perform processing in accordance with this specification.

4.2 Facility Approval Inspection

Facility approval inspection is performed with procedures normally used in production. Facility approval inspection consists of all the requirements in this specification. .

4.3 Surveillance

The cognizant Quality Assurance activity shall provide the surveillance necessary to verify conformance to this specification and processes.

4.4 Equipment Calibration

4.4.1 The cognizant Quality Assurance activity shall assure that the calibration system is in accordance with MIL-STD-45662.Requirements